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ABSTRACT OF THE DISCLOSURE

The present invention provides a gene delivery system that combines transductional targeting via binding to angiotensin converting enzyme (ACE) expressed on pulmonary endothelial cells with transcriptional targeting using the vascular endothelial growth factor type 1 receptor (flt-1) promoter. Compared to either approach used alone, this combined targeting approach resulted in a dramatic improvement in the target: non-target transgene expression ratio in vivo, thereby improving the prospects for pulmonary vascular gene therapy and establishing a fundamental principal for the use of targeting strategies generally.